

Biotechnology and genetic engineering in agriculture

The FAO traditionally uses a broad definition, based on Article 2 of the Convention on Biological Diversity, which states that biotechnology is *'any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use'*.

Agroecology Europe contends that the acceptability of biotechnologies in agroecological farming and food systems depends on their intended use.

Agroecology Europe welcomes the use of biotechnology in agriculture as long as it fulfils the principles of agroecology and sustains biodiversity-based agricultural and food systems, including their social component. For example, biological and molecular techniques which can facilitate the screening, selection, conservation and use of germplasm/organisms suitable to agroecological farming [e.g. Marker Assisted Selection (MAS), Quantitative Trait Loci (QTL) mapping, Genome Wide Association Studies (GWAS), in-vitro culture and DNA banking in gene banks] can serve the goals of agroecological systems. This applies to plants, animals and micro-organisms of agricultural and food/feed interest.

Contrary to the current form of 'genetic engineering', including GMOs and New Plant Breeding Techniques (NPBTs), agroecological farming and food systems:

- i. values the importance of diversified farming and food systems for agricultural sustainability – the foundations of agroecology;
- ii. it promotes, either directly or indirectly, multiple agricultural and food systems that increase agrobiodiversity at soil, field, farm, landscape and territorial level, upplaying the importance of conservation and sustainable use of local resources, and inducing high diversity diets which potentially improve human and animal health;
- iii. it distributes power in the hands of a various actors, mainly dominated by common interests, sharing open innovation systems;
- iv. it values farmers knowledge, food sovereignty and cultural diversity.

Therefore, agroecological farming and food systems are stable, not reductionist, propose multiple approaches to complex problems of agro-food systems, and maintain and increase farmers' autonomy and capacity to manage their own systems.

Agroecology Europe supports agroecological methods that provide a more sustainable way of producing healthy food, that are efficient because better adapted to local systems, more diverse, able to cope with the continuous evolution of pests and diseases without depending on chemical control and on technological 'silver bullets', and more resilient to climate change and unfavourable economic circumstances.